Singer Manufacturing Company
321 First Street
Elizabeth
Union County
New Jersey

HAER No. NJ-51

HAER
NJ,
20-ELI,
13-

PHOTOGRAPHS

WRITTEN HISTORICAL AND DESCRIPTIVE DATA

HISTORIC AMERICAN ENGINEERING RECORD
MID-ATLANTIC REGION NATIONAL PARK SERVICE
DEPARTMENT OF THE INTERIOR
PHILADELPHIA, PENNSYLVANIA 19106

HAER
NJ,
20-ELI,
13-

HISTORIC AMERICAN ENGINEERING RECORD

THE SINGER MANUFACTURING COMPANY

LOCATION: 321 First Street
Union County
Elizabeth, New Jersey
Bordering Newark Bay

HAER NO. NJ-51

DATES OF CONSTRUCTION:

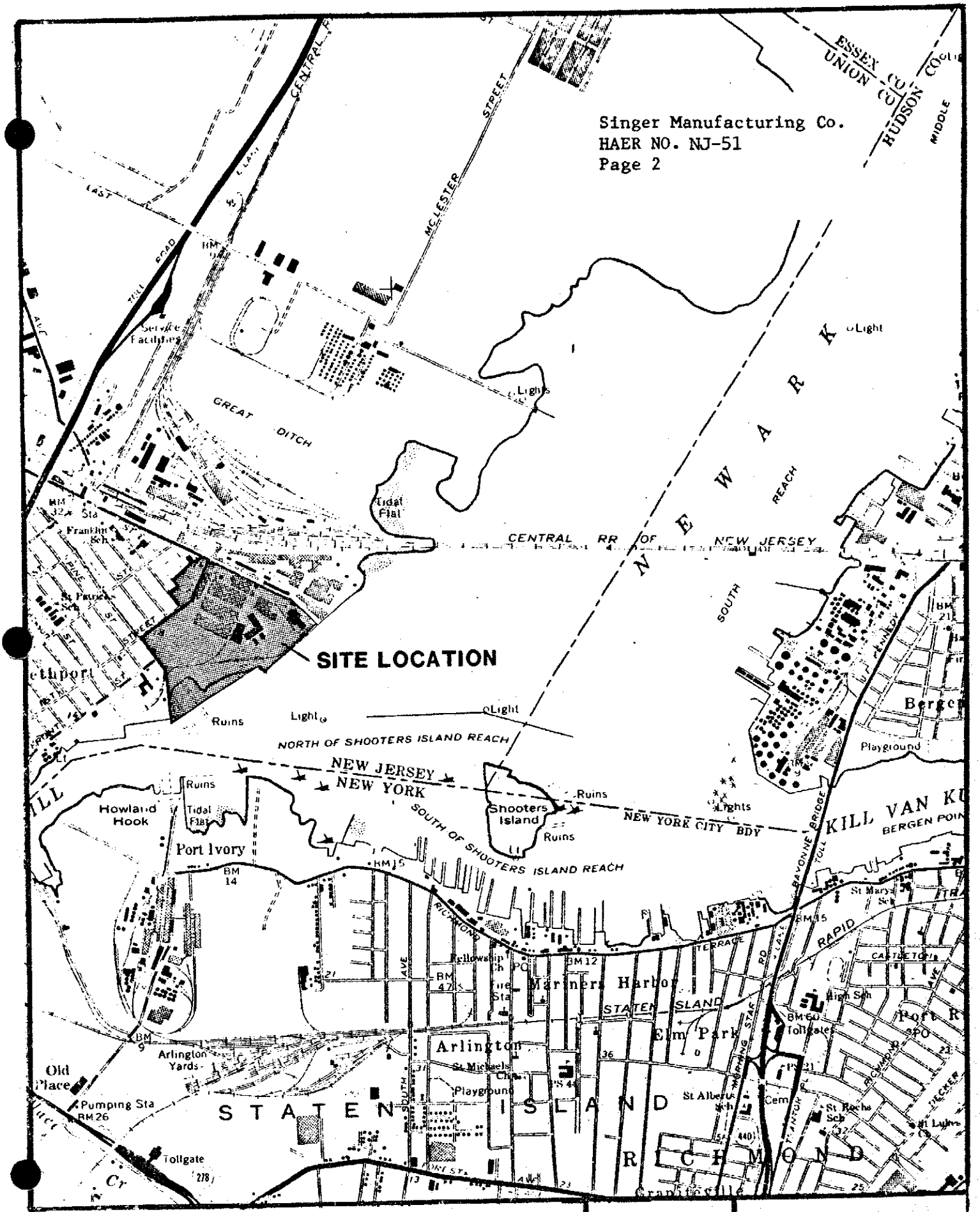
V-2	-	1918
U Bldg.	-	Between 1899 & 1905
C Bldg.	-	1905

PRESENT OWNER: New Jersey Economic Development Authority
Capital Place One CN 990
200 South Warren Street
Trenton, New Jersey 08625

PRESENT USE: Vacant

SIGNIFICANCE: The Singer Manufacturing Company was the first sewing machine complex in the United States. The organization dates back to 1851.

REPORT ASSEMBLED BY: Richard Paul Wiener
Division of Real Estate Development
New Jersey Economic Development Authority
Capital Place One CN 990
200 South Warren Street
Trenton, New Jersey 08625
October - November, 1984



USGS Elizabeth Quadrangle	MAP #1	LOCATION MAP

The Sewing Machine, according to historian, Robert B. Davia, waa probably the one "American mechanical invention of the nineteenth century, the use of which was not confined to any particular occupational or class group, but which came universally to be known and used." Revolutionary in its impact, it lightened the burdens of women and gave birth to a new industry; ready made clothing. Furthermore, says distinguished historian, Daniel J. Boorstin, "the sewing machine helped change the social meaning of clothing: a larger proportion of people than ever before could wear clothes that fit them, and could look like the best-off men and women."

The Singer Manufacturing Company did more than any other firm to make these developments possible. The machine devised by Isaac M. Singer in 1850, became the first to operate routinely and reliably with an automatic stitch mechanism, an automatic cloth-feeding device, and an automatically driven needle. During the next 13 years, Singer continued to improve his machine and received patents on such advances as the continuous wheel feed; the yielding presser foot; and the heart shaped cam as applied to moving the needle bar.

By the early 1870's the company's management had become increasingly aware of the inefficiency inherent in its manufacturing system, and it decided to concentrate all its activities under one roof in an area

convenient to shipping facilities. The firm settled in Elizabeth, New Jersey. In October 1870, the Singer Manufacturing Company purchased the first of several pieces of land along Newark Bay and eventually acquired a site with 1,000 feet of waterfront, excellent railroad connections, and tidewater passage to New York Bay.

The company enjoyed consistent growth and by 1963, had expanded into new product lines which maintained the growth in annual sales, although the future of their sewing machine line was deteriorating due to increasing competition from Japanese imports and decreasing domestic market for sewing machines. In 1959, the original complex was subdivided from the newer section and sold off to private interests currently known as the Portside Industrial Center. After an unprecedented low in October of 1979, Singer restructured their North American and European operations. They closed the consumer sewing machine operations in Elizabeth by October of 1980. At the present time, they are phasing out the entire Elizabeth operation and selling the remaining property.

Isaac Merrit Singer was born October 27, 1811, in Pittstown, New York, to German immigrant parents. A few years after his birth, his millwright father moved the family to Oswego, and here young Isaac spent his boyhood and obtained a limited amount of schooling. At the age of 12 he ran away from home and went to work as a machinist's apprentice. Despite his aptitude for this type of work, he soon became bored with it and ran away again. Around this time Singer became stage-struck, and for the next 20 years he supported himself by working as an itinerant actor and , at times, as a machinist.

Singer first demonstrated his inventive bent in 1839, when circumstances forced him to take a job in Lockport, Illinois, helping to dig a waterway. Because of the back-breaking work involved, he was inspired to develop a rock-drilling machine which he immediately patented. He then sold the patent rights for $2,000 and used the money to form his own acting company. After a barnstorming tour of several midwestern states, he ended up flat broke in Fredrickstown, Ohio, and was forced to accept a menial position in a sawmill. During his years here he began work on a machine to carve wood and metal but did not perfect and patent it until 1849 while residing in Pittsburgh.

That same year Singer moved to New York City in the hope of finding financial support for his new invention. Shortly after his arrival,

he met George B. Zieber, a publisher and book-seller, who agreed to invest $3,000 in the project. In August 1850, they went to Boston in the hope of attracting additional capital, taking along one of Singer's carving machines which they put on display in Orson C. Phelps' machine shop.

Although he failed in his avowed purpose of raising money, Singer had his first encounter with the sewing machine, a device which would eventually become synonymous with his name. At the time of Singer's visit, Phelps was attempting to repair a sewing machine, and Singer's suggestions as to possible improvements caused Phelps to urge him to design a better one. Readily accepting this challenge, Singer assisted by Zieber, went to work on the problem and 11 days later, says historian, Peter Lyon, "developed the first sewing machine that would work." On September 18, 1850, Singer, Phelps, and Zieber established a partnership to develop the machine further and patent it. Shortly after obtaining his patent on August 12, 1851, Singer interested Edward Clark, a New York City attorney, in the machine and gave him a one-third interest in the company to serve as its legal counsel. By this time Phelps had withdrawn from the enterprise, and before the end of the year, Singer and Clarke had purchased Zieber's interest for $4,000.

Singer's choice of an attorney as his partner was not surprising in light of the patent war being waged in the sewing machine industry.

In the early 1840's, several patents were issued for sewing machines, but none of these devices worked well, and none were put into production. Even the machine patented in 1846 by Elias Howe, usually credited as the inventor of the sewing machine, was impractical because it could sew only short, straight lengths. Actually, "eight men invented the sewing machine between 1846 and 1854," according to Davies, including not only Howe but Joseph B. Johnson, Charles Morey, John Bachelder, Allan B. Wilson, William O. Grover, William E. Baker, and Isaac M. Singer, as well. As a result, sewing machine manufacturers were constantly embroiled by patent infringement litigation.

By 1856 despite its legal problems, the Singer Manufacturing Company, according to biographer Carl W. Mitman, "had reached a commanding position in the sewing machine industry and took a leading part in bringing about the subsequent combination of manufacturers and pooling of patents" that took place that year. Until he retired from active involvement with the company in 1863, Singer constantly strove to improve his machine, and during the 12 years previous to his retirement, he was granted 20 patents for advances like the yielding presser foot, the continuous wheel feed, and the heart-shaped cam as applied to moving the needle bar.

With the firms's legal problems solved, Clark, who handled its business affairs, "introduced marketing innovations," say Porter and

Livesay, "that cleared the way for his firm's growth and prosperity." Beginning around 1856, and continuing in the decades that followed, Clark developed a system of branch offices which insured company control over its sales operations. Also, he utilized the company's sales network to promote consumer acceptance of Singer products by providing sewing machine demonstrations, instruction in their use, and supplies and attachments for them. He further accelerated sales by introducing a hire-purchase plan, believed by some to be the fore-runner of the modern installment plan, and by offering trade-in allowances on old sewing machines, even those of rival firms.

Almost from the beginning, Singer found a ready market for its machines abroad, and according to Wilkins, it soon evolved into "the first American international business." In 1867, Singer erected its first foreign factory in Clydebank, Scotland, and by the 1880's, it had constructed additional factories abroad and developed a sales and marketing organization that made its sewing machines available almost everywhere.

The aggressive management policies and the technological improvements pioneered by Singer quickly enabled it to surpass its rivals in size and to become the world's largest manufacturer of sewing machines.

By 1876, the firm was producing more machines than all its American competitors combined, and by 1890, was responsible for nearly 75 percent of the world's output. The company continued this growth pattern well into the 20th century, and in 1912, it had 60 percent of the American and 90 percent of the world's sewing machine market. In the 1920's, as the sewing machine market became saturated, Singer began a program of diversification which has continued to the present. Today, in addition to sewing machines, the firm manufactures power tools, floor care equipment, furniture, air conditioning and heating equipment, audiovisual equipment, and aerospace and marine systems.

The Company erected a five-story, red brick edifice in 1873, in response to the growing demand for its products and the need to consolidate its manufacturing activities in one location. The firm then utilized the building for sewing machine manufacture until late in 1960 when it was sold. The structure is in very good condition and now houses a number of small industries. It is the oldest known extant Singer industrial structure.

During the first three years of the company's existence, its machines were made in Orson C. Phelps' machine shop at 19 Harvard Place in Boston, Massachusetts. By 1853, however, manufacturing operations had been shifted to New York City where Isaac Singer and Edward Clark

resided. By 1858, the company had opened three additional plants in the city, and by the late 1860's the firm was utilizing several additional ones in an attempt to satisfy the rapidly increasing demand for sewing machines.

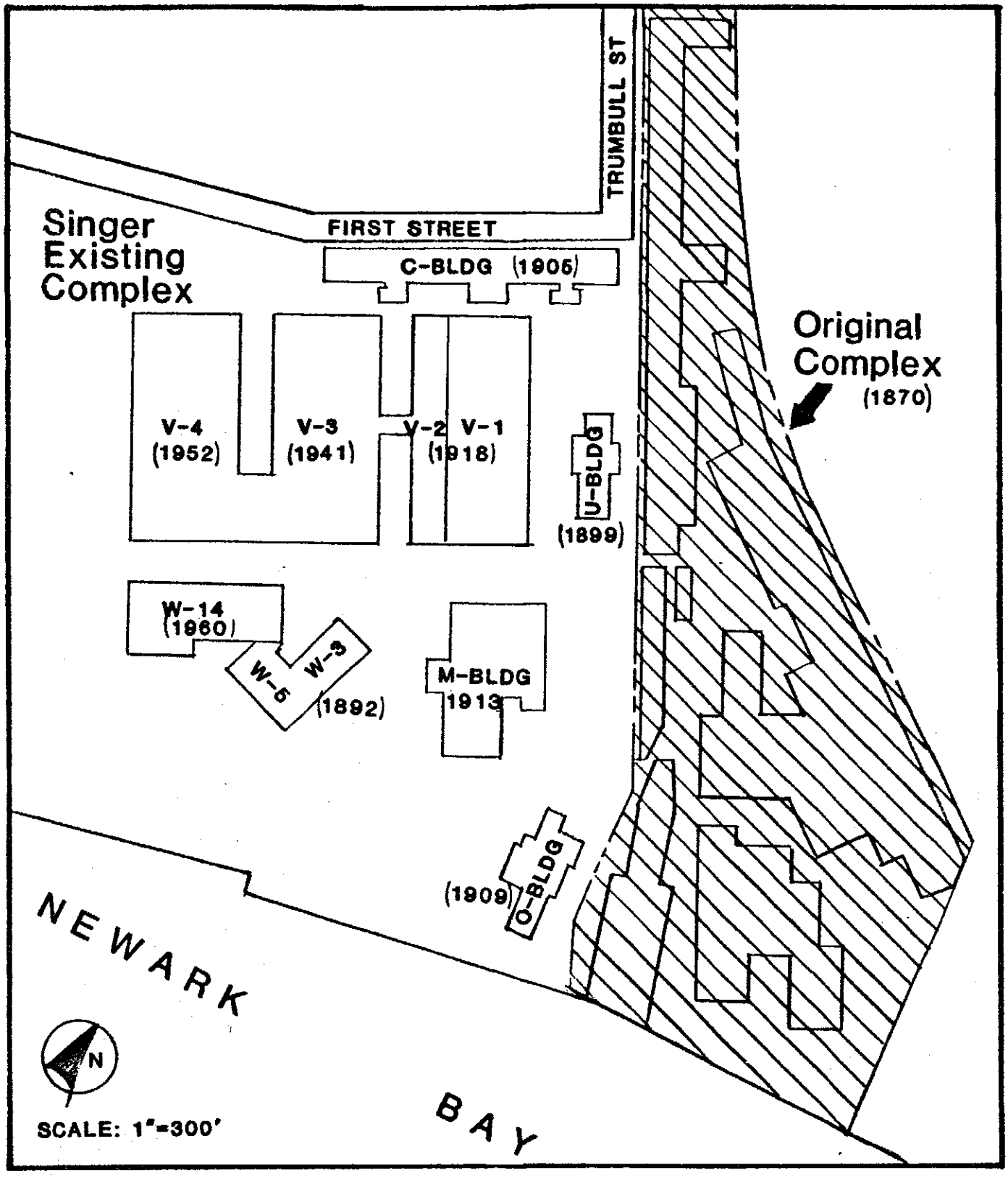
By the early 1870's, the company's management had become increasingly aware of the inefficiency inherent in its manufacturing system, and it decided to concentrate all its activities under one roof in an area convenient to shipping facilities. After first considering Bridgeport, Connecticut, as a potential site, the firm settled on Elizabeth, New Jersey, only a short distance west of New York City. In October 1870, the Singer Manufacturing Company purchased the first of several pieces of land along Newark Bay and eventually acquired a site with 1,000 feet of waterfront, excellent railroad connections, and tidewater passage to New York Bay.

Construction started on the new manufacturing complex around 1871, and during the next two years, Singer spent almost $2 million to erect what eventually came to be called the "Great Factory". On October 18, 1873, all the company's manufacturing operations in this country were shifted here. For years this plant and the company's facility in Clydebank, Scotland, vied for the title of largest sewing machine factory in the world. The distinction shifted back and forth on numerous occasions as both plants grew.

This five-atory commercial style factory is constructed of red brick and is capped with an over-hanging tar-and-gravel-covered flat roof. Exterior ornamentation is provided by brick wall pilasters and highly decorative brick corbeling along the tops of the first and fourth story levels and along the roofline, and by randomly spaced entrance towers which display architectural features identical to those of the main building. Windows are generally of the 20-over-20 wood sash variety and are set in arched surrounds with radiating voussoirs and keystones. Most doorways are set in rectangular surrounds, although along its front (south) facade the edifice features a frontispiece entrance with a broken pediment and a four-panel wood door flanked by sidelights. This feature and a nearby cast-iron fence mark the entrance to the building's administrative offices, which served for years as headquarters for the entire complex. Originally this building was shorter in length, stood four stories tall, and had a mansard roof. Late in the 19th century, however, an additional story was added, the mansard roof replaced by the current flat one, and the building's length increased to its present 1,500 feet.

The company fully utilized this building until sometime in the 1950's when the changing character of sewing machine manufacture rendered it obsolete. In 1960, the company sold it and several other older buildings

in the complex to an industrial park which utilizes them for a number of small industries. The overall condition of this factory, which is situated only a short distance north of the present Singer Company complex, is very good and it appears to be well-maintained.



SITE PLAN

MAP #2

Site Description

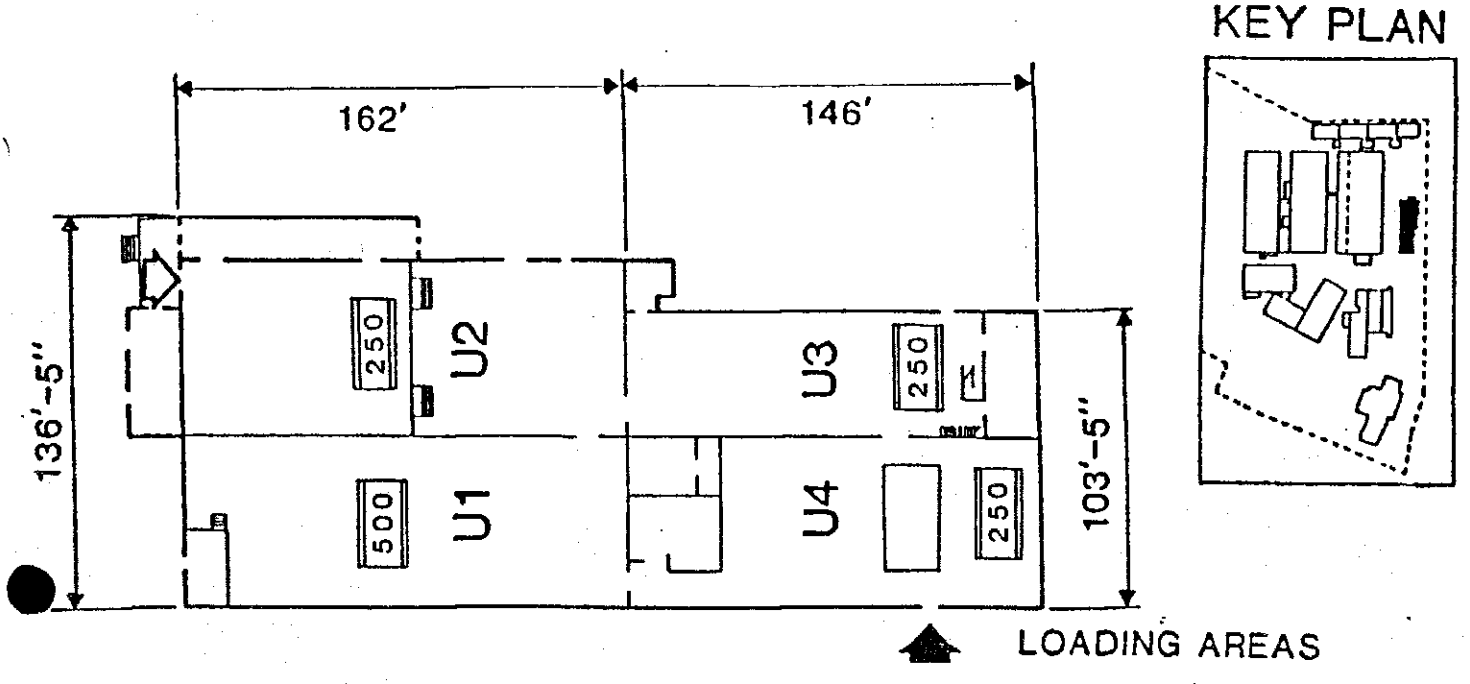
The Singer Manufacturing Company is bounded on the east by Newark Bay and on the west by First Street in Elizabeth, New Jersey. To the north exists the Portside Industrial Center which was originally part of the Singer Complex and was sold off to private interests in 1959. The site basically consists of nine buildings. The V series buildings, including V-1 (1918), V-2 (1918), V-3 (1941), and V-4 (1952) functioned as manufacturing, warehousing, and some office space. The W series buildings, including W-3, W-5 (1892), and W-14 (1960) were used for manufacturing processes with the W-5 housing a waste treatment plant. The M series buildings constructed in 1913, were used predominantly as warehousing facilities with some office spaces. The O series building was constructed in 1909, and currently houses the foundry for the Singer Plant. The C building, built in 1905, is used predominantly as office space in its six stories, with some manufacturing. Finally, the U building or Powerhouse, was built in 1899, and contains all the mechanical equipment that presently services all the buildings previously described.

The following is a description of the present and original (if known) physical appearance of structures within the Singer Complex to which this report refers. Building identification corresponds with atructures identified on Map #2.

U Building (Powerhouse) - This 35,802 sq. ft. building, presently housing equipment to provide power, steam heat, and process steam to the entire Singer Complex, was built in 1899 (U2 & U4) and 1905 (U1 & U3).

U Building has a 44 foot ceiling height at the center of the roof. Columns are spaced at 60' with supports for equipment. Foundations are reinforced concrete as are the floors which have a load of 200 lb./s.f.. The structural system involves a steel frame and roof truss system and a built up gable roof with monitors. Exterior walls are of brick and masonry construction.

The building houses 3 oil fired high pressure steam boilers, 60,000 lbs. each (Babcock & Wilcox) converted from coal to oil in 1956 for process steam and heating. Electrically it contains a 23,000 V bus duct system with step down to 2,300 V and 480 V.

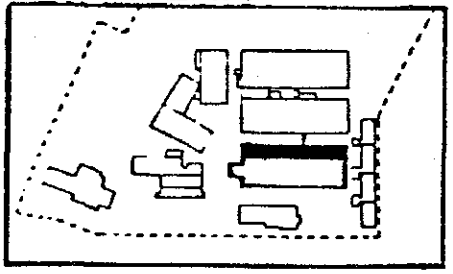


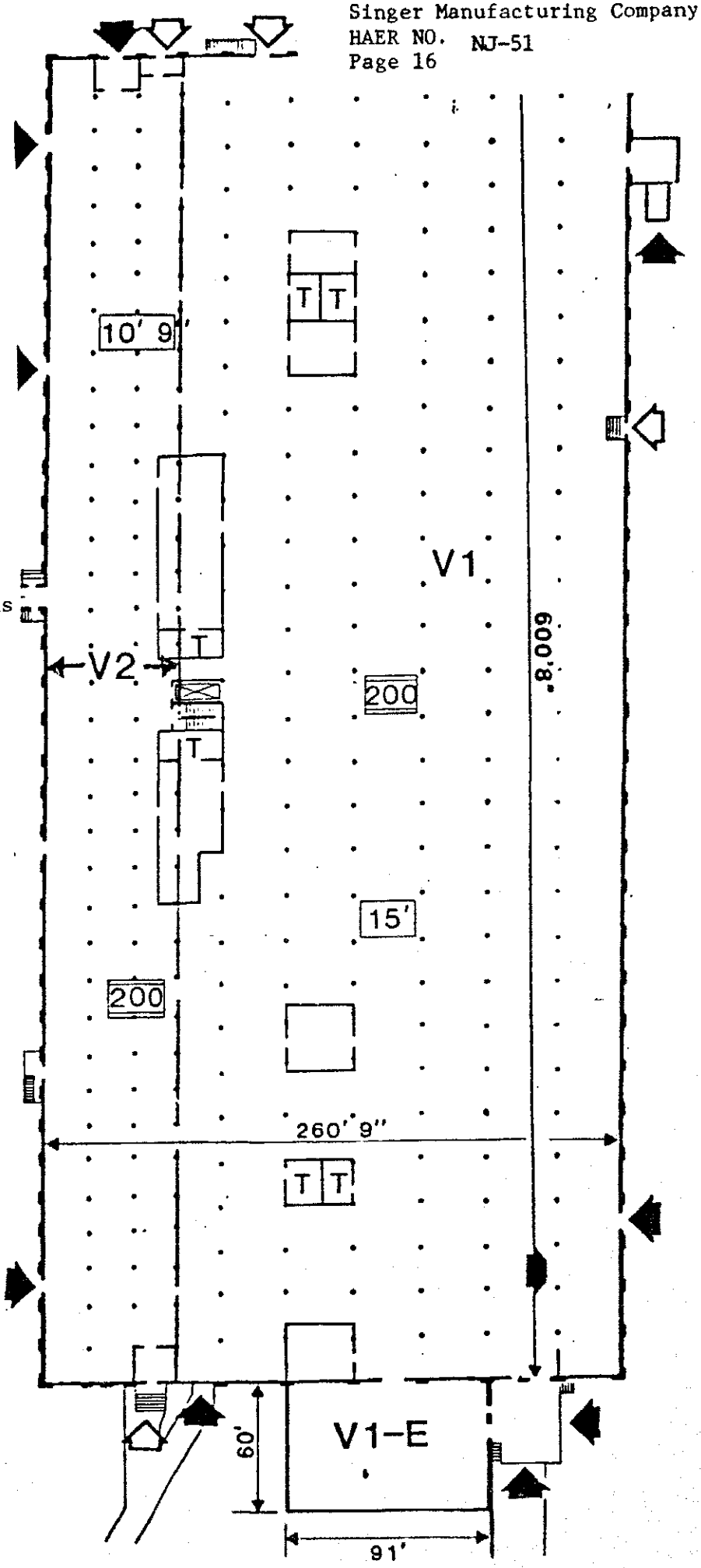
V-2 BUILDING

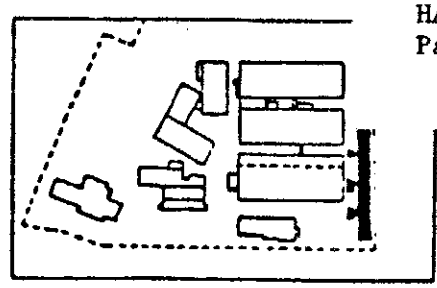
This building was built in conjunction with Building V-1 in 1918 and contains 104,607 square feet in three stories. The building foundation is reinforced concrete as is the floor which supports 200 pounds/ square foot and a structural system consisting of steel beams and columns and concrete piers in the basement. Columns are spaced at 20' x 30' and the exterior involves built up roofing and brick masonry walls.

The first floor has a ceiling height of 14.5 feet and was used for manufacturing and warehousing and 12.5 feet on the second and third floors which were used for office space.

KEY PLAN



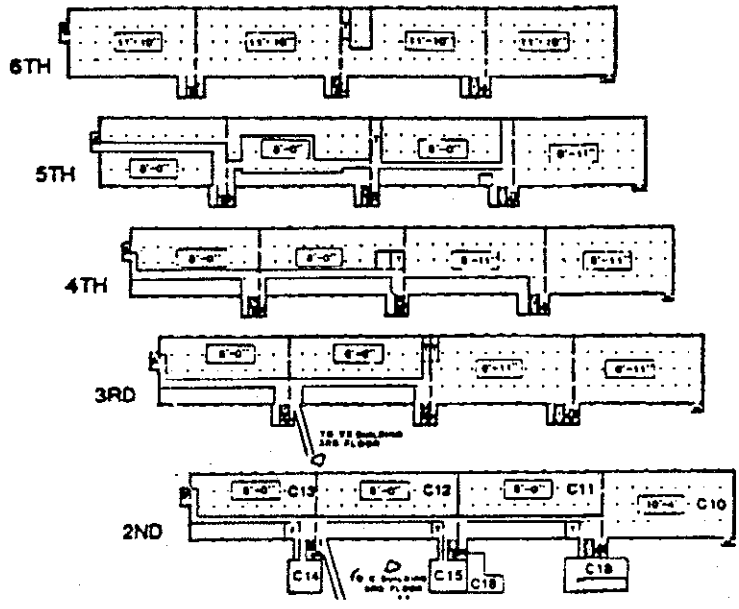


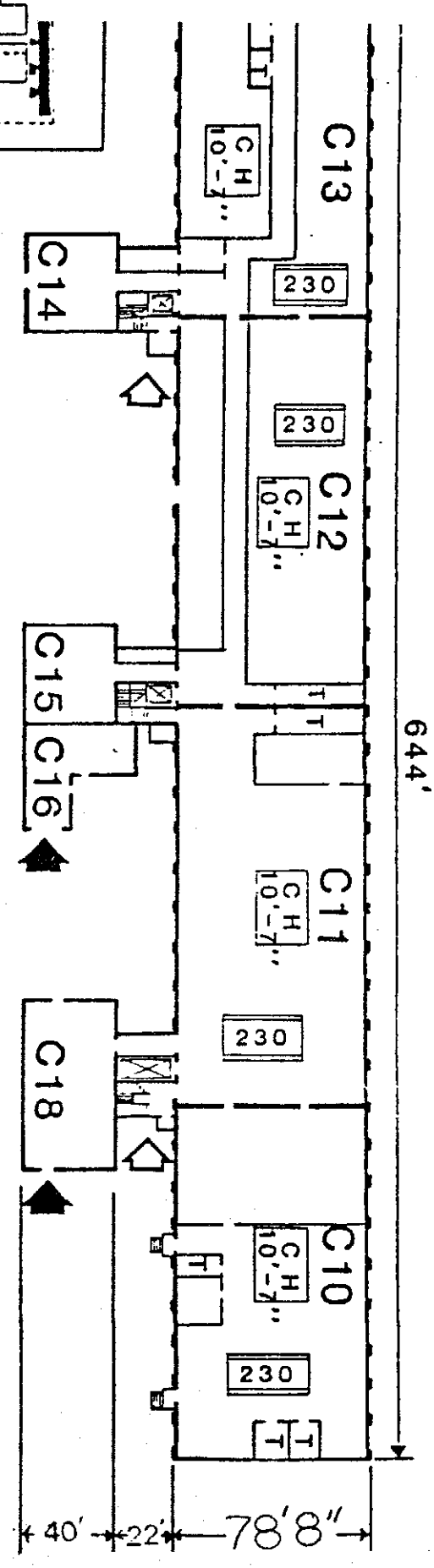


C BUILDING

Built in 1905, this building contains 301,232 square feet. It was combination office, manufacturing area, and warehouse. Most of the area is contained in four major sections which have six floors.

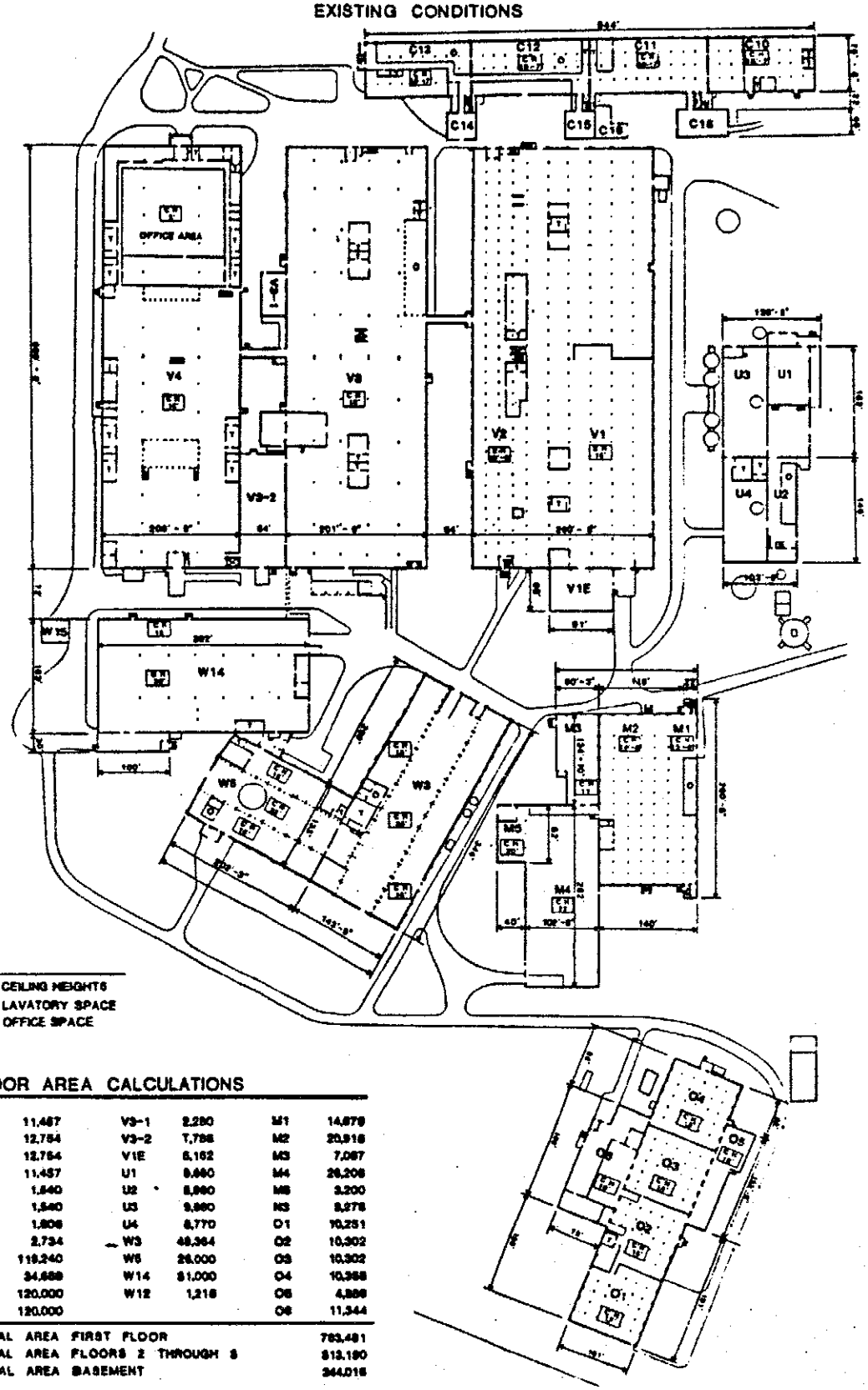
The foundation, structure, and floors are reinforced concrete and the exterior walls are common brick and masonry. The loading capacity of the floors is 200 pounds/square foot and has 14' ceiling height, 20' x 20' column spacing, and built up roofing and concrete deck. Utilities include 480V-3 phase electric, central steam heating, and unit heaters and pressure process steam.





FIRST FLOOR PLANS

EXISTING CONDITIONS



KEY

- 09' CEILING HEIGHTS
- 1 LAVATORY SPACE
- 9 OFFICE SPACE

FLOOR AREA CALCULATIONS

C10	11,467	V3-1	2,250	M1	14,879
C11	12,754	V3-2	7,796	M2	20,916
C12	12,754	V1E	5,152	M3	7,087
C13	11,467	U1	9,660	M4	26,206
C14	1,540	U2	5,660	M5	3,200
C15	1,540	U3	9,660	N3	5,276
C16	1,806	U4	8,770	O1	10,251
C18	2,734	W3	48,364	O2	10,302
V1	119,240	W5	26,000	O3	10,302
V2	34,688	W14	81,000	O4	10,368
V3	120,000	W12	1,218	O5	4,886
V4	120,000			O6	11,344

TOTAL AREA FIRST FLOOR	783,481
TOTAL AREA FLOORS 2 THROUGH 5	513,190
TOTAL AREA BASEMENT	344,016

THE SINGER COMPLEX
ELIZABETH, NEW JERSEY

NEW JERSEY ECONOMIC
DEVELOPMENT AUTHORITY

SCALE IN FEET

NEBYN-PETERSON ASSOCIATES, INC.
595 MADISON AVENUE
NEW YORK, NEW YORK 10022
(212) 980-9715

PROPOSED ALTERATIONS

The proposed redevelopment of the Singer Complex dictates the demolition of the U, C, and V-2 buildings. The subdivision and sale of individual buildings to individual owners/tenants requires their removal to facilitate parking and loading and to meet municipal land use requirements.

The current project schedule calls for these buildings to be demolished by the end of 1985.

LIST OF WORKS CONSULTED

1. Annual Report. New York: The Singer Company, 1981

2. Corporate Properties, Ltd. Marketing Recommendation. Rhode Island: Corporate Properties, Ltd.

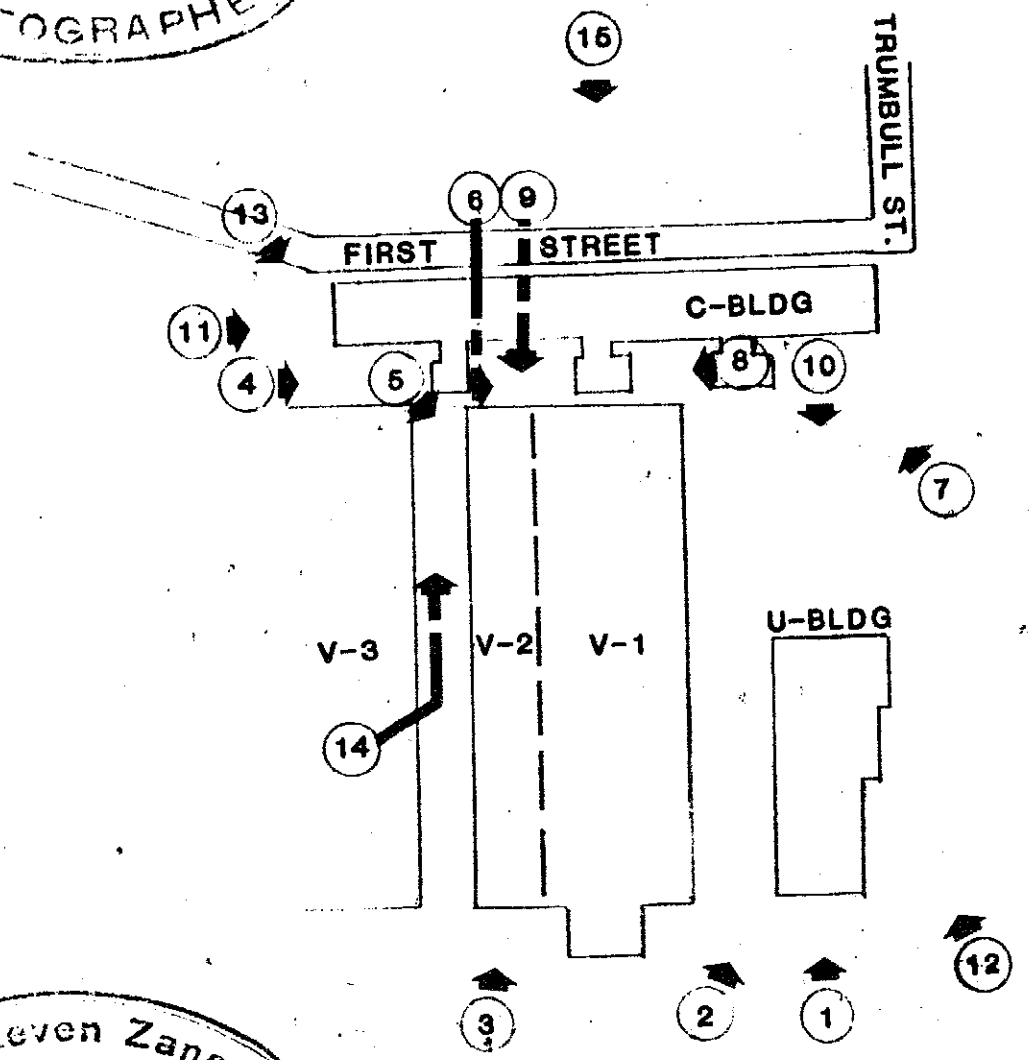
3. "Elizabeth Has Varied Manufacturing" Journal of Industry and Finance (July, 1939), pp. 30-32.

4. "Elizabeth Industrial History" Journal of Industry and Finance (July, 1939), pp. 26-27.

5. Nebyn Peterson Associates, Inc. Existing Building Analysis. New York, New York & Houston, Texas, for the New Jersey Economic Development Authority, Feb. 9, 1983.

6. Singer Company (Factory Building) New Jersey Historic Sites Inventory Doc. No. 1008.22, prepared by Ralph J. Christian, Historian, July, 1978.

Steven Zane
No. 12.16.84
PHOTOGRAPHER



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No. 12.12.84-1
PHOTOGRAPHER

VIEW NUMBER

DATE